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Video gap

Dr. James Manyika: …contribute about 58 percent of global GDP. And then the various shades of orange represent cities in the developing world. What's striking is if you look to the right of this chart you start to see the contributions to growth over time. And as you can see the majority of the growth contribution is coming from cities in the emerging.

And what's interesting about that is that what we've called here middle weight cities, so in other words not the mega cities but the middle weight basically are going to contribute close to 45 percent of GDP growth. The reason to point this out is that I think as we think about economic policies for growth and development often we think only in terms of nation states. And actually forget the unique contributions and the importance or think about metropolitan areas in the cities as engines for economic growth. Enough has been said about aging and the aging population and the challenges and opportunities that that's going to create in terms of how we care for the old, how we think about our social obligations, and whether our systems can cope with that.

I wanted to point to one particular aspect of aging as an important trend. And this has to do with labor supply. So we already know that if you look demographically across many countries by 2050 close to most city--most economies in the world especially the advanced economies first China, will have reached peak labor supply by them. Some are already there today. China or sugar will be there on current course and speed by 2024. So we're going to reach peak labor supply. So why does this matter? Well, it matters for this next reason. If you think about the implications on growth and productivity, if you look at the last 50 years and this represents roughly call it the G20ish countries in the world which make up the majority of global GDP.

The last 50 years has been if you take a classic solo growth to segregation model, it's been driven by two things. Roughly an equal measure. One has been the growth in labor supply and the other's been productivity. And the combination of those two forces have basically resulted in roughly the kind of a GDP growth that we've seen over the last 50 years. So let's look at the next 50. One of those things has been important in the last 50 is about to go close to zero or very low and that's labor supply portion of it. Let's at least assume that productivity growth stays what it's been in the last 50 which is again is a questionable proposition. As you can see from all the asks and discussions we're having today about productivity gain.

But let's just assume it does that, GDP growth is going to slow. So the question is what do we do about that? I think the good news in that story is that in fact there's a lot that can be done to drive productivity growth. It's not easy. It's hard. Many economies have tried that. But that's the only thing we can rely on because if we try and change the labor supply picture, yes, immigration will help, yes extending working age--the working age the people in the economy will have.

But it won't help to the extent of making up for the fact that it's dropping from roughly 1.7 percent growth to about .3. It may double it, maybe 2.6 or .7. The fourth shift that I'd like to highlight is quite frankly the result of what's happened and the growth that we've seen over the last two decades in particular. If you looked historically and you could have taken this chart all the way back by the 1800s, we've only ever had a tiny proportion of humanity on what you might call the consuming class. The consuming class, which is represented by the blue, the people who are earning enough to be able to spend for undiscresory items and services.

So they are basically living above subsistence level. There has been a tiny proportion rather the small proportion of the world's population. Well that's been changing, and on current course of speed it's quite likely that by 2025 we'll have close to have the world's population in the consuming class. At least it's defined in this way. In this way the bar is roughly $10 on a purchasing power adjusted--purchasing powered adjusted bases. So we're going to have a lot of people who are going to be in the consuming class. Even if you deflate a little bit some of the growth wobbles, we're starting to see in places like China. That number will still be quite significant if you take a long run fie. Or why does that matter?

Well it matters in the sense that one of the things that's now different is if you think about it, what are the groups that going to define consumption in the next 20 or 30 years. There roughly these lined groups. And it's actually quite interesting. If you look at them it says that in fact catering to the retiring and elderly in the developing economies is going to be one of the biggest consumption pools over the next decade.

And countries don't often think about that quite as much. If you think about some of these orange bubbles, those are going to be some of the largest consuming categories in the world and its worth in thinking about that. The fifth shift which is the shift to a global--to a more digital economy, this is already been underway for some time. I think, you know, you don't have to look around this room and see all of the things we've got in our hands and in our pockets and we are using technology and it's very pervasive and increasingly pervasive even in developing countries, but the thing I would like to focus on now is just to talk a little bit about the extent to which we are now starting to see deferential rates of usage and digitalization across the economy.

This first view is a view specific of the U.S. economy, at least in a sector sense, and I think if you are to put this picture up for most developed economies, Germany and others, they would look the same. What it basically shows that if you measured the extent of digitalization in three ways, first in terms of the assets which include data, how digitized the infrastructure and the assets are. Second, in terms of usage, which measures the extent to which the sector uses digital technologies to drive processes, to do transactions, to interact with customers and so forth, and then third, the extent to which workers in that sector are utilizing technology and working with technology.

What you see is that picture. Without going through the details what you typically will see in that picture are the different zones on that picture, and I'll focus on two of them. At the top of this are sectors that have been very, very forward looking or at least at the frontier of adoption, and it's the technology sector itself, media, financial services and so forth, at the top of it. At the bottom of it you often see a lot of these, mostly quasi public sector-like in large sectors. What is important about the group at the bottom is these tend to be the largest employers.

The increase in terms of the largest portions of most economies now, and we also know that these have the right to be low product sectors in the economy. And they are the least (inaudible)? What do they represent? Well, those represent sectors where even though the sector itself may not be as digitized--so you can take retail for example or even hospitality, for example. There are few companies in that sector that are doing remarkable things. So you can think Amazon or Alibaba, or you can think AirBnB in the case of hospitality. So you are starting to see even in these large not very digitized sectors some very innovative companies starting to do interesting things.

Why does this matter? Well, it matters in the following sense. We are starting to see a widening gap between the most digitized and the least digitized. What this chart shows is that the blue represents the portions of the economy that are at this frontier of using digital technologies, and the orange represents the rest. And what you can see is that even in the last 20 years the gap has been widening between the most digitized portions of the economy, and the ones who simply may have bought the technology, but are not as digitized in their usage of it. And what's particularly interesting is that if you look at what's driving those differences, well, the asset part of it is not that different.

The usage part of it is quite different, and then the labor portion of it is even particularly different. So you are starting to see this gap opening between--if you are like the ones in the frontier and the ones not so much in the frontier. You also see that amongst companies specifically. So this is a view of samples that include about a thousand fortune five--or very large companies. And you can see the differential rates of how digitized they are. Of course they all have digitalized technologies. Who doesn't these days? But you can see that they are established leaders and their use of it is far, far, far higher than the others.

So are you starting to have in some of these arenas is we've always had this debate between the digital haves and have-nots. I think that debate is shifting to one where it's more about the haves and the have mores, if you like, who are doing more with these technologies than the other are, and why--again, why does this matter. Well, you see it show up in the data; right? You see that they have mores, if you like--typically, if they are companies they foster revenue growth. If they are sectors, the productivity of the sector is far higher. The wages in those sectors and those arenas are also higher.

So you are starting to see this kind of bi-vocation. Now, this is just based on the technologies that we already have today and what's happened so far. The exciting thing is that there is still even more technologies coming, or at least ones that are already here, but they haven't quite achieved full-scale and still have a lot of potential. So this list that I'm--that we've called these disruptive dozen are basically classes of technology that look like they are set to have huge impact over the next decade and have yet to pay out.

So you have one set that is mostly around IT in the classic sense. So the mobile internet cloud computing the internet of things or the industrial internet as it is sometimes called. Artificial intelligence and automation of knowledge work. Then you've also got innovations that have to do with how we're starting to change the building blocks of things. So synthetic biology as well as material science. And then you've also got technologies that are at the intersection of how our classic industries work.

Whether it's 3D printing or robotics or even autonomous vehicles or near autonomous vehicles. And then finally you've got energy related innovations. I think it's quite striking when you think about what's now possible with energy storage, with lithium battery technology, for example. I mean, one of the things that we often forget is that a huge part of our energy infrastructure is premised on the presumption that we can't actually store energy unless it's hydro-electric power. And so as we start to make progress in energy storage, that's going to have a profound impact. Shift number six which is what we have called here the shift to digital globalization.

I think this has been highlighted before, but it's worth taking a long view as to what's happened with globalization. This is a--going back to 1980, it's not even that long, but, you know, globalization has had a terrific run. What this represents is the flow of goods, services and financial flows. Clearly we're way down from the peak, if you like, in 2007 where the financial flows in particular had spiked up, and we kind of backed down to a certain level. So the question is what's happened. Now, of course, we know that, for example, the slowdown, if you like--or of goods trade is part of the story.

There is good reason for that. Part of that has to do with commodity prices which are typically inside goods trade. Some of that has to do with the shifting and changing nature of value chains. So it's been

evolving. But the interesting part is to look at what this other flow is--what's been going on with this other flow which is--people haven't--at least as we don't think, analyzed quite as much, which is the flow of digital data or digital flows, if you like. And this is just going back just 10 years ago. So this picture just represents--the blue part shows, if you like--the size of the bubble represents the interregional use of data and then the lines show the kind of flows between regions.

You could have done this for--at the country level and at the city level. But even in just the last ten years, they--this has grown explosively, by 45 times as much. Now, we know that a fair number of the--a fair volume of this is driven by video across, you know, video watching going back and forth. But we also know that a lot of it enables more economically driven flows, whether it is services, big [audio skip 01:08:53] people--that largest circle represents the number--the--that's the number of connections that, you know, the number of people in the world who have connections in another country based on a technologically enabled platform.

It's nearly a billion people. All of the way down to, for example, the number of people who are now engaged in cross border e-commerce, which is now about 360 million people down to, for example cross border online workers. So people are doing work in one country, you know, and work with somebody else in another country, but doing it on a technological--technologically based platform. [Audio skip 01:09:32] One of the point to--one of the shifts that's worth pointing out, and this probably applies as much.

I think quite often when we think about globalization we often think about competitions between nations, although I don't think that's the right way to think about it, but it's interesting to think about what's happening at the--for companies as a result of these (inaudible) globalization. I always find this chart quite interesting that up until quite recently there were very few companies from the emerging markets who were in the global fortune 500, and that picture has changed quite dramatically already. And we can fully expect that close to half the number of companies in the global 500 in the next 10 years will not be from the advanced economies.

That's going to change the nature of competition quite profoundly as it's already begun to do. Another way in which these trends are also changing the nature of competition is some of what's represented by this chart. What this shows is what you're starting to see with companies who are using technology based platforms to participate in sectors outside of what you might think of as technology sectors. So you are seeing this in, for example, in the computers arena where companies like Amazon are now starting to play in the cloud computing space when in fact you don't think of Amazon as a computing company. [Audio skip 01:11:01] competition, which raises a whole bunch of questions from, you know, so who are our competitors.

How do we think about the rules? Are they the right rules? How do we think about who the right partners are? Which assets actually matter? And so there is a whole set of questions and a whole new way to think about competition as a result of these trends. At this point in would like to pause and maybe get some reactions from some of you. and the question I would like to pose here is, as you think about some of these trends I've just ran through very quickly, which are some of the ones you think are going to have the most impact. Now, I've--we fully anticipate that some of these represent opportunities, and some of them represent all sorts of challenges, but I would like to get the audience and all of you to kind of pull out your technology devices and maybe vote.

I think it's on the cloud. So if you've got your app, if you could go to the cloud, to the word cloud section, I think you can vote, I think the way it has been set up. [Audio skip 01:12:12]. It will take a few minutes as to which of these you think are going to have the most--two or three that you think are going to have the most impact. While that's being tallied up, I wanted to point out one or two other quick trends very quickly, and these are ones that we might think of as kind of much needed shifts. They haven't quite happened yet, but these are our kind of--I would argue, needed [audio skip 01:12:45] shifts.

The first one of those is greater gender parity. And this is an economic question. I'm going to start with two numbers based on some of the work we've been doing, and I see Anne-Marie who has been a good friend and collaborated some of this work we've done, 28 trillion and 12 trillion. Actually, the 12 trillion number is actually the more interesting number, by the way, rather than the 12 trillion. And I'll explain those in a second. What we did is to try and look at--we looked at about 93 countries around the world that make up about 90 percent of global GDP and asked this as an economic question. Gender parity is an economic question.

We looked at about 24 different measures of parity. One set of those was focused on parity at work. So think about that in terms of, you know, parity in terms of wages, in terms of the kinds of jobs, the mix of jobs. We know that some jobs are higher productivity. So therefore tend to have higher wages. And we looked at participation rates. So we looked at, if you like a set of measure on equality--parity at work. We also looked at set of measures that look at parity in terms of enablers of economic participation.

So you might think of this as property rights, access to capital, digital inclusion, for example. But also other measures that include things that enable people to participate. So education levels, for example. And we also looked at some other social factors that affect economic participation, safety, for example. We know that in some parts of the world, if women aren't safe and can't feel like they can travel to their workplace that can affect their abilities to participate.

So, anyway, there's a range of about 24 factors that we looked at. And the picture that emerges, we kind of created a score. The picture that emerges is this. And, you know, if anybody was perfect they'd have a one. Nobody has a one. One of the messages that this says is that we all have work to do. This isn't something for just poor developing countries to work on. Even the most advanced economies are not at parity. Every area has a lot of work to do. As you can see is it's as low as .44 in Southeast Asia all of the way up to about .74 in North America.

So let me come back and explain these numbers. The 28 trillion is a bit of a theoretical number in the following sense. This is if we shared--what if you could magically give parity across all of these 24 metrics? How much incremental as measured GDP would you have? That's the 28 trillion number. The 12 trillion in our view is the more interesting number. What that number represents is what we call sort of neighborhood regional analysis. So what we did was to say, "Pick several micro regions in the world. And in that region, find the country that's done the best. Not perfect. That's done the best in that region on these measures. And what if you got the other countries around it to do the same?" So you might say in parts of Latin America, Chile has actually made a huge amount of progress. So what if all the countries around Chile could do as well as Chile has? In the Middle East, you'd look at UAE. Again, not perfection but it's actually done--it has made the most progress. What if you got the others to do the same?

The reason that number is--that's how you to get to the 12 trillion number. We like that number simply because it has an existence proof that somebody has done this in the region, so it hopefully gets us past those debates about cultural differences, regional differences, that there's a real opportunity here, if, in-fact, we could do that. So that's what the numbers represent. So I like the 12 trillion number.

We won't go into this but I'll mention it. The other shift that's needed is more inclusive growth. I think some time has already been spent here talking about that and more [audio skip 09:31:41] and let's take a look at the results from the first question we asked.

So it sounds like people think that the shift that traditional globalization and the digital economy represent the bigger--the most impact. Well, that's actually good because that's going to be the subject of our next panel. So maybe we can get into some of the discussions about those implications and some of the opportunities and challenges.

But I'd like to ask one more question, if I could, before we leave. And the question is, of these shifts, we're curious to understand which ones do you think are going to be the most challenging to navigate? Because, again, these all represent not just opportunity but some real challenges. We know [audio skip 09:32:39] that technology raises questions about jobs, about--there's a whole set of questions that these

represent. But we're curious what the room thinks are about--which ones are going to be the most challenging to navigate.

Okay. So while the results are coming in and you're typing, I wanted to do just one more thing and then we'll transition to our panel. If I could get this to work. Can we shift to the next screen, please, while the results are still coming in from the voting? You've gone too far.

One more thing. This morning--I wanted to highlight that this morning, we actually announced at the young--at the YPS forum, a prize that we and some of our friends have put up. What the prize is, we're calling it the Opportunity for Europe prize. And some of our friends, Pascal Lamy being one of them and a few others have kind of joined hands with us to do this. Let me describe what the prize is. There's a lot of debate and discussion right now about growth for Europe. And while many people, including ourselves, have done analysis and all kinds of things that show that there's a real economic opportunity and potential for Europe to grow, a lot of the debate seems to linger around how do you get the reforms to work that are needed?

So we thought that we'd try and tap the best minds, especially the young ones, to think about this question. So we created this prize that's actually just being launched today, and the prize would be awarded in October. And the President of the European Commission as well as Pascal and a few others are going to help us judge this. The question of the prize is, you know, what would a reform agenda and set of ideas look like that could be enacted no later than 2020 that would help Europe grow? That's the challenge we're putting out. Submissions are open until the end of July and the winning essay will get a prize of 60,000 Euros and there's a prize pool for the runner-ups and so forth. And there's a particular prize for submissions for those under the age of 30 to encourage some fresh ideas.

So with that, I'll point us back to see which ones--how the voting went. And it looks like people have prioritized the shift--the aging question is one of the most challenging ones, as well as the gender parity shift, if you like, is another that's quite challenging. But thank you for that.

With that, I think we'll shift to the panel, Steve and I'm sure we'll engage in some of the questions related to digitalization. Thank you.

Mr. Steven Clemons: Nice job, James. What I really want to know is of that 45 percent in video explosion, how much of it are dogs and cats doing cool things? I bet a lot of it.

We are going to have a discussion now. We're going to amp things up. Great discussion. We've got about 55 minutes and we've got to, you know, have a little interaction up here and then work with all of you. I am Steve Clemons, I'm Washington Editor At Large of *The Atlantic* and I like to have fun. So you may

not be thinking you're going to participate and I'm going to come right up to you and say get ready, okay? So you're ready? All right. Well, we're not there yet.

Let me introduce, first, Clemens Betzel. Clemens is the Head of Government Affairs for Europe of Siemens. Then we have Carlo D'Asaro Biondo who is President for Europe Middle East Africa for Strategic Relationships for Google. We have Kaja Kallas, a member of the European parliament. I should say based in Estonia, from Estonia. You're not from any other country and faking it, right? You're really from Estonia. And then, of course, James Manyika, Director of the McKinsey Global Institute.

The next session, which Nik Gowing is going to be doing--it says Off The Record but I'm going to announce it, with Robert Kaplan, Bob Kaplan is one of my great friends. And like Bob, I tend to thrive in darkness and cynicism. And so--and be skeptical of lots of things. So one of the things I just wanted to start out with and pose to you is just sort of a counter-position. Because we've heard so much from James and to a certain degree, there's this determinism in technology and where we're going, but if you look around at the politics in Europe, if you look at the politics in the United States, there's some resistance going on. I was reading something Don Tapscott, who wrote the book, "The Digital Economy," wrote the other day and he says, "Technology does not create prosperity nor good democracy nor justice." And so I just want to start there with a counter-factual. Do you agree with Don Tapscott?

Mr. Carlo D'Asaro Biondo: No.

Mr. Steven Clemons: Why not? What's the Google view?

Mr. Carlo D'Asaro Biondo: First of all, I don't think--technology's an enabler and not an objective. It's only a mean. So it's what we make of technology that is important, not technology itself.

Clearly, technology today enables a lot of different things. In particular, what I think is important today and we saw it in the slide from James, is that mobility and technology and the technological platform that has been developed by many companies, including Google, allows sectors to merge, blur. Frontiers within sectors sort of blur. And we see more and more activities that are created by the collaboration with different sectors.

So to me, technology is allowing, first of all, if you want us at a level of democracy of access to information for the entire world, and I cannot not see a progress in the fact that everybody around counties that had less means as today the possibility of getting information, learning, starting and accessing things.

Of course it creates social issues in the sense that we all know what is possible in the world, and we desire it, which I think is good, I think that the frontiers within technology oblige each of companies like

individuals to accept the fact that you need to deserve who you are every day. You don't have access to statutes forever, you are challenged continuously.

And I think, as well, that collaboration is a great opportunity. If you think about it, when I speak about technology, we often mention the internet. The internet is probably the first time in humanity where we do have a common language. And at the beginning (inaudible) like so many other people. But the common language between machines, which started between mainframes, then to PCs, then goes to phones, then goes to glasses, then goes to--it is an incredible opportunity to deepen the human relationships.

So, yes, there may be bad usages. We have so many good ones. Let's see the world that's positive.

Mr. Steven Clemons: So let me ask you to go a little bit deeper. Sometimes, you know, I ask you to start off and, you know, it's interesting because I went to look at your tweets and your tweets are protected. So I don't know if you're trying to tell the European Commission that you believe in privacy, that Google's not all--

Mr. Carlo D'Asaro Biondo: I don't tweet a lot.

Mr. Steven Clemons: You know, but I noticed that. Or at least I couldn't get in. But the interesting thing is I sometimes ask people to sort of think about what the flaws are in your argument. You know, in April of 2000, Bill Joy wrote the wonderful piece in *Wired Magazine*, "Why The Future Doesn't Need Us" and said that advances in genetics, nanotechnology and micro-processing and computing were going to create sort of profound effects on society. And I think, James, you sort of create a continuity in that picture.

But I'm interested in whether, you know, people get left out of the equation. Right now, it feels good but tell us the flaws in your own thinking that you just shared. What are your up-at-night issues about your own perspective?

Mr. Carlo D'Asaro Biondo: The flaws in my thinking that technology is positive. Wow, you ask me a difficult question. I think the inclusiveness one is an important one. You know, if you realize it today, we have a tendency to think that the values we have in occidental countries should be applied all over the world. And we have a tendency of willing--of desiring that the world resembles (inaudible) to us, which can be a risk because by providing technology information around the world, everybody has the same opportunity to [audio skip 09:41:27] looking at that. Again, I think it's a question of usage. And I see things that are seemingly positive because I see, you know, the number of small businesses that can now export all over the world at variable costs, thanks to companies like mine. I see the possibilities for accessing information in Africa and the advanced usages they make in those countries of technology. And they're leapfrogging.

I see the benefit for the countries which are coming a bit later in being able to access the new technology at the last and the best way.

Now, the flaw is how to interpret that. You know, privacy, security, safety. What meaning do we leave to that? The risk is to look back instead of looking in the future. And to me, the biggest risk is if we look back and think that by looking back, we can find the solutions, well, we have a problem. And if you let me finish one sentence on this, is the one risk I see for Europe because of the quality of life we have in Europe, best foods, have the best architecture and we have a quality of life (inaudible) in 3,000 years, we have a tendency to become a bit--I wouldn't say complacent but to say nobody has the right to disrupt us. Nobody has the right to make change in that (inaudible) won't like his argument.

Mr. Steven Clemons: Kaja's going to disrupt you. Yeah, Kaja's all about disruption, right? Kaja, you're creating, as I understand it, a single market digital act or digital single market act, and it very much, as I understand it, having spent a little time with you in the green room, you think that Europe needs to be disrupted. Do I have that right?

The Hon. Kaja Kallas: Well, yes. But I also want to comment on your interactions. So basically, in the European Parliament, I see this view a lot and I was really surprised when I was elected today--

Mr. Steven Clemons: You mean the Robert Kaplan view?

The Hon. Kaja Kallas: The view that technology is not good and we shouldn't embrace it, we should fight against it. I think from the policymaker's perspective, the first instinct is to say that, you know, it disrupts our world and we don't want this. But it is not the right way. I think if--the Chinese actually have this proverb that if the wind of change blows then some people build walls and some people build windmills. So I think from the policymaker's--

Mr. Steven Clemons: And some people steal technology.

The Hon. Kaja Kallas: Well, good. But anyway, the thing that we see from the policymaker's perspective is that if we fight against what is already there and what people actually like and use, then we eventually--we don't win this fight. So we have the choice to be part of this designing all the environment for this innovation and also to draw in the sand, what are the problems that need to be looked at and need to be regulated but not fighting against it does not work.

Mr. Steven Clemons: So let me ask you to go one notch deeper. You do leave your tweets open for people and thank you. I did go in and read your tweets. And in that, you were very critical of European regulators and legislation, thinking they could separate, for instance, innovation from research. I found that to be

profound and that you're trying to think about what the building blocks of innovation are. You were sharing that publicly.

And I guess my question is that, you know, I sort of get the sense that sometimes we don't know what we don't know, that the process that Europe needs to go through is not the regulatory--you know, it's, like, I asked the High Commissioner for Trade yesterday about the 159 areas of exclusion that they have in their trade deal. That sounds to me to be a hyper-regulated set of concerns.

And so take us down that path and what you think needs to happen.

The Hon. Kaja Kallas: Well, first of all, I think the basic rule is to stay out of the innovation in a sense that the regulators--the first reaction is to regulate something that is new. But when you have the incumbent over the existing in mind, you're actual in favor of the incumbent while making the regulation. So when we have the discussions very often about the digital world, then the word Google comes up a lot and people have this in mind.

Mr. Steve Clemons: Do you guys have Uber in Tallinn?

The Hon. Kaja Kallas: Yes, and we also have--

Mr. Steve Clemons: And how do the taxi cabs--taxi cabs are cool?

The Hon. Kaja Kallas: We have actually initiated, in Estonia, a law for enabling all this, because the thing is people's behaviors have changed so people like these services so there's no point to fighting against it. So you just have to make the rules so that it just is okay for everybody.

Mr. Steve Clemons: Great. And Clemens, I love the first name. Some of you may not get that. I'm Steve Clemons. You're Clemens Betzel. So there's a lot that could happen there. In any case, Siemens. I actually happen to love Siemens and you sort of build everything. You're sort of the manufacturer of everything, but you've almost moved a lot into software. I'm familiar with your PLM software group that helped land the lunar module on Mars.

Curiosity had a big Siemens footprint in it. But I'm also interested in this question of disruption and whether companies like yours really have souls. And what I mean by that, in a sense, is how do the questions of, you know, we see technology advancing. You see innovation. You see that driving and almost none of that regularly takes into account the social responsibility sides of questions except unless there's sort of a property to it. Take me back. Where am I wrong on that?

Mr. Clemens Betzel: Completely wrong.

Mr. Steve Clemons: Okay. Glad you're blunt.

Clemens Betzel: As names [audio skip 09:47:16:25] and me here next to each other you would think, okay there's one company that is from 1847 and another one from 1988 and there is a huge discrepancy between the old economy and the new economy. The interesting fact about Siemens is not how old it is, but because it survived that long. And the other interesting fact is that you can see an approximation between the old economy and new economy today.

We have 17,000 software engineers around the world, as you mentioned, and we see the new economy companies, including Google I think, although correct me if I'm wrong, moving into actually doing things that you can touch and buy, manufacturing things, looking at manufacturing cars or at least help to design cars. They bought a building automation company recently with Nest that goes right into competition with old economy companies. And we meet through the machine to machine communication. We meet through the internet and things and we all need it to develop into the next generation of goods.

And there is disruption, yes. But through surviving, the soul is shown because we keep jobs. It may not be the same job for the 140 years, but there will be jobs if we do our job right and we move out of the old industries and embrace the new and provide the basis for profitability.

Mr. Steve Clemons: Before I jump to the audience, let me ask James. James you gave us so much information, it reminded me of a quote of Arno Penzias. Arno was a Nobel Laureate. He worked for Lucent Technologies and he had this great line that the internet or technology like this, the internet will make dumb people dumber and smart people smarter. And I'm wondering whether what we're seeing in your graphs about the world and the trends we're seeing is smart nations are going to have more and get smarter. Those that are slower and have less are going to fall behind. Is that what you're seeing in a geostrategic scale?

Dr. James Manyika: Yes, and I'll rephrase that in the following sense. I think we're starting to see--

Mr. Steve Clemons: You're going to reframe a Nobel Laureate's frame.

Dr. James Manyika: No, no, no. I'm going to reframe you, Steve.

Mr. Steve Clemons: Okay.

Dr. James Manyika: I think I can do that. No, I think what we're seeing is that the smart entities, that's the reframed part, the smart entities, whether they're individuals or companies or nations, are getting much more out of this than the rest. I think that's the distinction that we're starting to see. And I think that's worth paying attention to because I think, at this point, you know, most people, in certainly the draught economy anyway, have access to these things. But I wanted to come back to your point about where's the human soul in all of this.

The thing that's maybe complicated now with technology is that it depends which part of the human you're talking about, right? So if you said the humanist consumer, what's not to like about any of this stuff, right? It's cheap. It's free. It makes our lives convenient. I was telling this morning at YPS fund--the question of Uber came up. And I was telling the story that in San Francisco the other day, I was actually in a taxi and the taxi driver's complaining about Uber saying this is terrible. This is awful. And I said to him, well have you ever used it? And he said, oh, yeah. My family loves it. It's very convenient. My kids go to school in it. It's so flexible. They come to my neighborhood when they can't get taxis. So I think that highlights the point that you have to ask who's asking the question. So I think, for consumers, it's mostly good.

I think for workers, it's a bit of a mixed story, right, because we know that there's automation and we know that there's disruption to established modes of work. I think as citizens, it's also a complicated story because on the one hand, technology's giving us transparency in areas where we didn't have as much transparency. But at the same time, it's maybe making it possible for more disruptive political behaviors to take place. I think you have to ask who's asking the question.

Mr. Steve Clemons: You know, James, I devour McKinsey Global Institute reports, as you know, and they are good folks. They're long. They're a bit too long sometimes, but I do like them. Do you ever think about writing a report just called "The Downside," rather than all of the gains we made from the transformations, looking at the impacts on parts of the economy left behind, what might need to be done to be adjusted. Because so much of our discussion, when we think about the world beyond disorder, so much about disorder is the clutter of that which is left behind. Has MGI done anything like that? Maybe that could be a project.

Dr. James Manyika: We've done that--

Mr. Steve Clemons: Would anyone fund it? Google might.

Dr. James Manyika: Well, actually, by the way, we actually fund our own research for the explicit purpose of the fact that we want to be able to say what we want to say. But I think what we've found with technology is that, of course, there are downsides. In fact, we've often noted what those downsides actually are. But, you know, I think our view is that the net is positive.

Mr. Steve Clemons: Right. Carlo.

Mr. Carlo D'Asaro Biondo: I would like to riot against this distinction between old economy and new economy, which to me is a very dangerous distinction. [Audio skip 09:52:27.15] don't survive and maybe you don't deserve it. Utilization is a very important value and I do believe that there is a lot of good if we

listen. And you distinguish between smart and not smart. To me, the distinction is in who listens and who doesn't.

If you listen and you're capable of accepting change and are youth-oriented, you deserve to be here tomorrow and you'll do whatever you do, whether you are Siemens or any other company that has been there for hundreds of years. So I don't like the distinction between old and new economy. It's like if there were an antagonism between technology and the rest.

Mr. Steve Clemons: And so where would you, Carlo, where would you put the European parliament in listening or not listening?

The Hon. Kaja Kallas: Depends which part.

Mr. Carlo D'Asaro Biondo: Depends on the day. But honestly, if you look at what the European parliament is trying to do—actually, let me say it this way. I think the bashing of Europe is a bit dangerous. This, to me, is not the European parliament or the European Commission. The issue is European countries, which are now getting back to nationalism and to populism and to somehow trying to have sovereignty. The European Commission tries to do the best in order to obtain a digital single market, and we need to help them, not bash them.

Mr. Steve Clemons: I'm going to tap my friend Sinan to jump in. Sinan.

Mr. Sinan Ulgen: Thank you, Steve. Actually, I was just going to--

Mr. Steve Clemons: And tell us who you are, by the way.

Mr. Sinan Ulgen: Yeah, Sinan Ulgen with EDAM Istanbul and Carnegie Europe in Brussels. Actually, I was just going to follow up on the dark side of technology question. Now, we have certainly--and bringing the previous debate as well, link it to the previous debate because in the previous session, we talked about the dark side of globalization. Now the specific theme that I would like the panel to address is essentially the linkage between technology and the future of employment, particularly.

I mean, this is a perennial question since the industrial revolution. But the thing is that the pace of technology called progress is accelerating, and that means that the challenge that we face in terms of creating new employment, decent employment, is also accelerating because of technological progress. I mean, it certainly increases productivity, but then there's the gap on the side of employment. And how do we square that, the technological progress and job creation, decent job creation in the future?

Mr. Steve Clemons: Thank you. Clemens. And then, we'll jump to you, Kaja. Clemens.

Mr. Clemens Betzel: Not by over regulating. If you stifle a technological revolution, we suffer more. Our creative potential is to create new jobs when old move into a secondary role and then eventually

disappear. The term creative destruction is terrible, but it is what is happening. There is a technological revolution. You don't have many people in oily overalls in factories anymore. That's obsolete.

The new factory is clean and employs very few people. But those that are in it are very, very qualified so they will move. We need the regulatory framework to help us with education. We need to have a social system just to buffer the requirement in this day and age. You cannot be expecting a 40 [audio skip 09:55:33:19] salary. It's unlikely. [Audio skip 09:55:35:20] rare to be found. [Audio skip 09:55:42:05]

The Hon. Kaja Kallas: The [audio skip 09:55:49:19] work with the relationship between [audio skip 09:56:10:11] the employer. They are [audio skip 09:56:15:20] We have this idea that is based on the industry-based economy still, so it's a bit different. Just one point.

Mr. Steve Clemons: Make it fast.

The Hon. Kaja Kallas: Also in the robotics and artificial intelligence working groups in parliament, so we see a lot of this. And 50 percent of children who are currently living or born already do not work in jobs that are currently existing. So it will not work in jobs. So this is what we can't see, but there are jobs coming. They are just different.

Mr. Steve Clemons: That is a fascinating point. I want to jump to Carlo and I'm going to make a point of my own. Carlo.

Mr. Carlo D'Asaro Biondo: The problem to me is McKinsey did some studies some years ago and technology and the internet are creating more jobs than they're destroying. The problem is are we creating jobs where they're destroyed in the same place? So to me, there are two options which matter a lot. One, education.

Mr. Steve Clemons: Right.

Mr. Carlo D'Asaro Biondo: And the second one, understand that the jobs the internet brings are not only jobs for engineers that have five years of experience, but they are jobs for people that will code on platforms to code applications that create content for the web, create videos. We have committed, as Google, to train two million people, and we wanted to do it in two years. And actually, we did it in one year and a half, and we'll continue that two million people in Europe to those kind of technologies, collaborate with schools, education. But look at the reality. There are lots of jobs created.

And if you look at the app economy, today it's 17 billion. In Europe, it will be about 60 billion in Europe in three or four years. Today it's 1.4 million jobs. It should be about 5 million jobs. If we try to present them what they are and try to bring them to Europe, good for Europe.

Mr. Steve Clemons: Thank you. I think, James, before I'm going to jump, I'm going to add one element to this and then we'll jump to James and then I want to go Anne-Marie. And definitely, you've got two fingers in. We'll move around. One element I think, as we are talking about those that aren't there. I interviewed Jeff Weiner, the CEO of LinkedIn recently. And he talked about the secret of LinkedIn was really that the vanity of academics became the vanity of all of us, that we were creating a constantly revolving resume to show off what we were doing.

But he said that's good for people on the upper end. What they didn't have were people what you would call sort of average pay jobs or lower pay jobs. And sometimes those people are not necessarily operating in the same forces we are. They need to show what they can do as journeymen, what they can do as builders. They need video. They need other kinds of things. And so they partnered with some U.S. cities like Detroit, like Phoenix, like Denver to look at what they can do at these sort of mid-level jobs and create a different ecosystem that goes to your question I think directly about what, to create efficiency.

Because a lot of what's going on, I think, is that we're asking people to live in a turbo-charged world with incredible convulsions, but not give them the pathways to do it. It's fine for the upper end, but not everybody's there, and I think that may be coming. James.

Dr. James Manyika: No, that is absolutely correct. I think when it comes to the question of work, I think there's two parts to it. I think, on the one hand, I think technology can actually help labor markets work better. So the Jeff Weiner example, he's talking about how do you make the labor markets work, supply and demand to make people expose themselves, become more discoverable. Put my profile online. Put my ratings online so people can actually find that I'm good at something.

So from that point of view of making the market matches work better, it helps a lot, improves participation rates and so forth. But I think there's a separate question which has to do with how to think about what's happening with automation. And this is where I go dark with you.

Mr. Steve Clemons: Thank you. [audio skip 09:59:59:13]

Dr. James Manyika: --to provide that output. There's no question about that. I mean, look at what's happened with manufacturing in the United States, at least where I know the numbers and can describe them, right? So between 2000 and 2008, just before the recession, the U.S. lost 5.8 million jobs in manufacturing. Not all of that was off-shoring, by the way. And in fact, the debate that economists are having is, was it 15 percent or 25 percent? No one is saying it was 90 percent. The rest of it was mostly automation for equivalent levels of output. So I think we have to contend with the fact that automation will actually happen.

Now, what's the counterbalancing effect of that? Well, if we actually become more entrepreneurial, and create more companies, and more things, then we can make up for the fact that we're producing more and doing more to make up for the fact that we're automating.

Mr. Steven Clemons: I do remember the McKinsey Global Institute's study on why off shoring was good for America. Do you stand by that?

Dr. James Manyika: Oh, yeah.

Mr. Steven Clemons: Okay. Just wondered.

Dr. James Manyika: Absolutely.

Mr. Steven Clemons: It's supposed to be a laugh line, but it didn't work [audio skip 10:01:08:13] you're really charting the digital future so, with whatever you're about to say, I want you to say are you working on solving some of these problems that are coming with digital transformation?

Ms. Anne Marie: Yes. So let me say on that the--all of us who are in the nonprofit and government world, and many of the people in this room who are in government, I mean in the private sector, our business is public problem solving. And we used to solve public problems with legal code. It used to be that's what lawyers did. We went to law school, we learned how to make laws, we solved public problems.

Then we added economics. That's what public policy schools teach. And now you need to add computer code. So you're not serious about solving a public problem if you are not equally thinking about legal, economic, and computer code. So that's the nonprofit version of this.

One quick comment, and a question, which follows directly from the conversation you were just having. So the comment is just in the realm of sunny optimism, I do hope after a day of doom and gloom on Europe, you all notice that Europe was the largest blue bubble on flows. Europe was much bigger than the United States. Just saying. Maybe because it's the largest economy in the world, but it seems striking, particularly given how far behind Europe is when it comes to startups and innovations. There's something going on.

My question is how much all of you have thought about job shares. Because when you look at this, you see a bunch of high-paid jobs, right, and then a huge gap and fewer and fewer low-paid jobs. And then you see gender parody. If you split all those high-paid jobs into two jobs, and they're well-paid, you will achieve two very big things at one time.

You'll spread the number of jobs, and you will make it far easier for parents and people taking care of their parents to hold a job, and meet their care obligations at the same time. So just wondered if you've thought seriously about--

Mr. Steven Clemons: For those watching--

Ms. Anne Marie Slaughter: --job shares.

Mr. Steven Clemons: --buy Anne-Marie's book "Unfinished Business," and learn more about this. Clemens, is Siemens ready to go in that job share direction?

Mr. Clemens Betzel: We're right in the middle of it.

Mr. Steven Clemons: Really?

Mr. Clemens Betzel: You cannot be competitive in the job market today if you don't offer exactly what Anne-Marie is describing. You need to offer that to qualified women and men to take sabbaticals when the baby is coming. And come back into the job place, and then be flexible with working hours. All that has to happen if you want to be competitive as an employer.

Mr. Steven Clemons: You cover so many countries. How many countries does Siemens operate in?

Mr. Clemens Betzel: More than the United Nations.

Mr. Steven Clemons: More than the United Nations. So just to take that bigger--that's a profound statement you just said, that you're on the same page with Anne-Marie. Are you on the same page in all of the places in which you operate?

Mr. Clemens Betzel: Obviously there are regional discrepancies, but the theory is global. We want to do right by our employees, and we want to be doing right by our planet. That's the other big thing is the impact of industry and the new industry on ecology. And again, not to bang our drum too much, but a statement that we say by 2030, we want to be climate neutral as a manufacturing company with 350,000 employees, that is a substantial statement. And others should follow. And maybe we should be even quicker than that.

Mr. Steven Clemons: Does Siemens have any problem with the European Commission right now?

Mr. Clemens Betzel: No. We are in constructive dialogue.

Mr. Steven Clemons: Any advice for Carlo?

Mr. H.E. Donald Tusk: Carlo is always two steps ahead on his team because they're big.

Mr. Steven Clemons: Alfredo.

Mr. Alfredo Valladao: --to question--

Mr. Steven Clemons: Tell us who you are. I know you, but everyone else needs to know.

Mr. Alfredo Valladao: Okay.

Mr. Steven Clemons: You are--

Mr. Alfredo Valladao: I'm Alfredo Valladao from Science Po in Paris and Brazil.

Mr. Steven Clemons: Great.

Mr. Alfredo Valladao: Okay.

Mr. Steven Clemons: That's a whole other topic we could get into, but another day, yeah.

Mr. Alfredo Valladao: Yeah. We could. We could. Another day, yeah. I'd like to have a question to you, James. When we talk about growth, you can have strong growth with low margins and low profits. And you can have not so strong growth, weak growth, but with huge value added in margins. So when we talk about competitiveness, the big question is who gobbles the biggest share of global value added? And have your institute made a study on which companies, which sectors, and which regions are gobbling this winner-takes-all of the digital revolution?

Mr. Steven Clemons: Great question. Thank you.

Dr. James Manyika: When it comes to the digital revolution specifically, one of the things that's quite interesting says whose getting most of the value out of it, there's sort of two ends of the spectrum, right? On the one hand, you've got these large platform players. They're global. Alibaba, Google, and others.

On the other hand, you've also got small and medium sized businesses. So the digital revolution is great for both those ends of the spectrum, because if you're a small or medium sized business, wouldn't you want to be on a global platform like eBay, or Alibaba, because that exposes your products and services to the whole world. So the difficulty that you find in the--with regard to technology, are often these what I'll call national champions, who are sort of middle--in the middle. Right.

I think they're going to have the toughest time of all of this because if you're not fully global, as a platform, nor are you a small business that can take advantage of these platforms and be global, that's a tough spot to be.

And I think that's part of what we're seeing quite often play out. And I think those middle somewhat national champion companies who are not the global platforms nor the small or medium sized businesses, are often the ones who are putting a lot of pressure, I think, on policymakers in their particular countries. And I think that's a little bit of what we often see.

Unidentified Male: Except regionally.

Mr. Steven Clemons: Except regionally. Yeah.

Unidentified Male: Silicon Valley (inaudible).

Dr. James Manyika: Oh, absolutely.

Mr. Steven Clemons: Yeah.

Dr. James Manyika: Absolutely. And you see this around the world. So we've actually done kind of a value-profit pull analysis, and you can see the pockets around the world of different sectors and industries that are, you know, accruing a lot of the viad.

Mr. Steven Clemons: Thank you. Mr. President.

Mr. Toomas Ilves: Toomas Ilves. Aside from that, I mean, wearing a different hat along with (inaudible) the chief economists of the World Bank, we just led putting out a massive book--here, you can show it here.

Mr. Steven Clemons: "Digital Dividends." And can they it at Amazon or is it--

Mr. Toomas Ilves: No, you can download it--

Mr. Steven Clemons: And you've got any special connect--

Mr. Toomas Ilves: You can download it for free from the World Bank. But to be--

Mr. Steven Clemons: Just don't print it. It will cost a lot.

Mr. Toomas Ilves: There are more pages in the PDF than in the printed version. All right. I think we're going off here, about and what's good or bad. Is digitization good?

Mr. Steven Clemons: I'm a black hat/white hat kind of guy.

Mr. Toomas Ilves: Yeah, well, I think there are other black hats, which I'll get to.

Mr. Steven Clemons: Oh, good.

Mr. Toomas Ilves: Digitization is going to happen anyway. It will be taken up broadly by all kinds of countries. This is the whole point of this exercise is that getting it right. And how to do it. My fear, and where I think I would ask Kaja Kallas to--my compatriot, to expand, is that the real problem is not that the--you start with laws and then you end up with digitization. It is that today the legal environment offered in Europe is hindering development. It is--it will not be a problem in India--

Mr. Steven Clemons: Right.

Mr. Toomas Ilves: --because they will make new laws and are making new laws that allow and enable this new technology to work. Copying among other things what we do in my country. But at the European level, we have--we are adopting or we are persisting in a Luddite approach to things, trying to restrict the development of the use of--

Mr. Steven Clemons: I just want to note that you said Luddite about the Europeans, not me. That's--

Mr. Toomas Ilves: No, I'm not saying that Europe--the European Union is Luddite. I'm saying there are very strong and powerful Luddite elements in policy formation, in legislating that will in fact hinder us. And there are also strong elements of 19th century protectionism. Or a protectionist model. And moreover, I mean, when I see an attempt to maintain 19th century economic models--

Mr. Steven Clemons: Mm-hmm.

Mr. Toomas Ilves: --in a digital age, you end up with situations such as charging the head of Uber for France with five years' potential imprisonment. We cannot legislate our digital economies to remain undeveloped, or we can do that, but then we have to face a prospect in which Europe will fall and greasing the behind. And the whole point of this exercise will show that, in fact, countries can leap far ahead if they have the proper legal environment. And we do not, at this point, in Europe, have this.

Mr. Steven Clemons: Let me ask you, Toomas, and Kaja, whether or not, I think most people know how excellent Estonia's digital platform is. And moving into health records, voting. It's just a very different, and I would say, excellent platform that really stands out as a model for Europe.

Has that made you popular in Europe, or more resented? And as you begin discussing the single market digital world that you've been trying to legislate, do you find other countries--what are the points of resistance? What are the speed bumps to creating the kinds of efficiency, and I would go to the inclusion that I think Estonia's tried to create.

Mr. Toomas Ilves: Well, I think first of all, there is this--

Mr. Steven Clemons: Resentment or--

Mr. Toomas Ilves: No, no, I don't think--no one's resentful of Estonia, but I mean, I think it is that people do not want to give up old models. And I guess, Uber's the best example of that. More, I think, it's a completely misguided understanding, an non-technological understanding of what privacy is.

Mr. Steven Clemons: Right.

Mr. Toomas Ilves: Where privacy is conflated with all kinds of things. And where I fear that with cross-border data transfers and with increasing internet of things, or IOT, we are focusing really on the wrong things, where, I mean, when it comes to security, which is a very big issue. The real issue should be data integrity which I sum up saying privacy is someone finding out what your blood type is. Integrity is someone changing your blood type in the records, which I think is far worse.

I don't think it's resentment, but and in some cases it's envy, but that's different. But I do fear that this clinging to the old is going to stifle us, and other areas will take [audio skip 10:12:01:01] off. The United States [audio skip 10:12:06:12].

Mr. Steven Clemons: Interesting. Kaja.

The Hon. Kaja Kallas: Yes. Well, in the European Parliament, I think the difference between the Nordics and the older south or central European countries is seen very, very much when it comes to the MMPs in the discussion. So, especially in some countries, big, big European countries that want to fight the new business models, and new--all this disruption in different fields.

So, all this discussion, what we have, also privacy, for example. When we have discussion about big data, then sometimes I think that people don't really understand how the technology works. So when we have the discussions, and it all comes down to private data, and personal data. And there are different aspects of this debate where there are very big conflicts. And I don't know how they can be overcome.

So I think in my view, what we have done in Estonia is that we also lead by example, like the government also provides digital services that the people can take up and this also is [audio skip 10:13:33:20] the government shouldn't do anything. And they say in some parts of Europe, they say that, you know, people don't want it. If we ask people, they say we don't want it. And then I try to explain that if we would have asked people the first [audio skip 10:13:53:16] then how can convenient it is--

Mr. Steven Clemons: Mm-hmm.

The Hon. Kaja Kallas: --then they also trust them. And they want more. So, this is how it works. We have to lead by example.

Mr. Steven Clemons: Carlo, let me ask you--yeah, go ahead.

Mr. Toomas Ilves: (Inaudible)

Mr. Steven Clemons: You're back on.

Mr. Toomas Ilves: (Inaudible) the old Henry Ford line--

Mr. Steven Clemons: The Henry Ford line. There we go.

Mr. Toomas Ilves: --of 100 years ago is that if I'd asked people what they wanted, they'd say a faster horse.

Mr. Steven Clemons: Ah. Fascinating. Carlo, let me ask you, because in [audio skip 10:14:35:28] relationships and speaking of faster horses, I know that part of--you've worked with AOL, Lagardere,

now Google, and so you've spanned different parts of the business environment in the broad, sort of, greater Europe region.

What do you think from Google's perspective--Google is bigger than most countries in the world. And what do you think the holes and the gaps are in Europe and the Middle East, Africa region that you're trying to fill, that you think are important as you think about strategic partnerships. Do you--what's your strategic plan?

Mr. Carlo D'Asaro Biondo: Well, we--the first element I would say is we don't see us as big at Google. We are sort of paranoid. We are oriented to listen until tomorrow, so we try to follow what users want. So we don't know what the future will look like and we don't even try to know. We listen to customers, to users and we develop things by iterating this is number one.

If I have to think to Europe, and then I'll talk about Middle East for a second, my concern is believing in the future. And I think we have a very big responsibility, all together, versus the future generation not to spend too much time on doom and gloom. but spend time on [audio gap 10:15:54:04] It will go down. So there's one thing which you need to believe and you need to inspire and you need to create desire. And to me, what Europe needs is that. Needs confidence back. Desire back. It has brought a lot to the world. It will still bring a lot to the world if it wishes so. If we sit down and decide that the future is bad--

Mr. Steven Clemons: So in the future, in five years, to make specific now--

Mr. Carlo D'Asano Biondo: So, for me, in Europe, this is that. Well--

Mr. Steven Clemons: Yeah. But in five years, what are the challenges?

Mr. Carlo D'Asano Biondo: Educating people--to me, educating people to the web, making them understand there are lots of professions that can be done, that maybe they will do something different than what they expected, but they can do it. And in the south of Italy, tourism, enable people to serve tourism properly. There would be lots of jobs created.

The Hon. Kaja Kallas: And I also think--I totally agree with this that we are not so much focused in the future in Europe. In Estonia, we are focused on the future. But in Europe, in general, we are focused on the present.

Mr. Steven Clemons: The rest Europe wants a faster horse.

The Hon. Kaja Kallas: And the present and the past. So we want to maintain this and that's a big difference.

Mr. Carlo D'Asano Biondo: Interesting (inaudible). To me, there is a difference, which is the Middle East is, at the moment, more and more opening itself to the world and this will create a very interesting

platform for the future. You see a very strong desire to listen when you go there, which actually I find very refreshing.

Mr. Steven Clemons: I want to just jump to Linda and Ros. I don't really know them. I want to. Let's have dinner tonight somewhere. But Linda and Ros are with Intel. Both of you are at Intel Corporation? Women in technology. I'd love to just get just a quick snapshot from you about what you think the big cutting-edge questions in technology and disruption are. I mean, Intel is one of the companies that really transformed the planet before Google that created an enabling capacity. And so from your perspective of having been one of the early platforms and Bill Joy was worried about what the world you were creating, what do you think we're missing that we should be talking about? And this is Ros.

Ms. Rosalind Hudnell: (Inaudible). Yeah, it's been interesting to me to listen to this conversation because with due respect, I think we're having a very privileged conversation. So when I step back and think about it, I think about the millions of people all around the globe who may be able to have access, but they don't. And I think about our educational structures, for the most part, still are training young people for jobs of yesterday. And so I think about when people see technology as an enabler for their future, when people see technology not just as something they consume, but [audio skip 10:18:39:05] happens that's where people all around the planet are changing their lives.

So I kind of look at this conversation, and from an Intel perspective, you know, we went and trained 12 million teachers not because we thought it would be disruptive, but we thought that would enable the next generation to actually engage with technology different. And we have a long way to go. So I just look at this and say that whether we like it or not, through Moore's Law, technology will continue to advance and advance and advance and it will become increasingly ubiquitous. And there is phenomenal opportunity in that if people have the resources, the structures and the support system to enable that. And so the world was not equal before technology. Technology is not going to overnight make it equal and so I think, you know, the opportunity for all us is to think about how technology can be an enabler to broaden

[audio skip 10:19:44:03]

Ms. Linda Qian: --close, you know, to be enabled through technology, we're not going to be successful as companies. I think it's time that, you know, we all acknowledge that fully and step up and address the problem.

Mr. Steven Clemons: Where are our Young Professionals summit folks? Put your hands up. Some of you, I just need--no, leave it up longer. I need to see where you're at. Okay. You're all invited. I may walk up to one of you now that I know generally where you are, but you're welcome to post questions and the coolest questions on the board I'm going to ask in the minutes that we have left. So if you have one of

these little iPhone gadgets and you know how to use it, you know, you've been taught, go ahead and do that. Otherwise, I'm just going to walk up to you and do it the old fashioned way. But, yes, sir.

Unidentified Male: Yes, I'm (inaudible). I'm with Youth Empowerment in Washington D.C. I learned a lot with James' presentation and I'm afraid I don't learn always as much when I listen to political debates in Europe and in the U.S. So my point is how do you make sure that all the information, what's going to happen in the next 10, 20 years, how do we make sure that our legislators, our politicians on both sides or wherever have this information and make sure that the right (inaudible) agenda--environment for our companies to strive in the next 20, 30 years?

Mr. Steven Clemons: Well, if you can see, we're only better with marketing. That might help. But James, any thoughts on that.

The Hon. Kaja Kallas: Or to make politicians (inaudible). That's a good question.

Dr. James Manyika: I think you're right in the sense that it's fascinating to me that, even in the current presidential election in the United States, a lot of these issues aren't part of the dialogue or the discussion when, in fact, this is, you know, how we think about the future of work, how we think about the role of technology, and all of these things should be at the forefront of the conversation and they're not as much as they should be. So anyway, something about how do we engage politicians and policy to actually really think about this.

I think the only time, it seems to me, that they get engaged is when it comes to thinking about how to regulate the stuff, as opposed to how to think about how to take advantage of the stuff and create economies that grow in highly productive and innovative. I don't think there's enough of that conversation going on, but there's some bright lights and I'm quite thrilled, for example, that--I don't know if any of you have seen it. (Inaudible), for example, has put out a digital agenda for the U.S. economy, which I think is quite fruitful and is engaged. And I'm sure there's other examples of that in other countries. But I think you're starting to see some policymakers who are thinking hard about these questions and how to make the most of this.

Mr. Steven Clemons: Can I just--before I jump to our friend from the Young Summit just ask Kaja and any--Carlo or Clemens to comment. But I sense, in regard to that question, that data doesn't do it for everyone, that data floods people in a gusher and a lot of people just don't trust it. And one of the things that seemed to me to be real about Bill Clinton style globalization was it was based on the movement of ideas, people, institutions in a higher and higher trust world.

We seem to have a higher fear world, both in terms of conflict around the world, it's harder to move people, or if they are moving, they're often rejected. So the boundaries have come up in a lot of ways,

which completely coincides with your explosion in data, you know. But I'm interested in the issue of trust because I don't think that, to your answer, that when Donald Trump or Cruz or I would even argue to a certain degree Hillary Clinton and Bernie Sanders, at some point, they're not making data cases because [audio gap 10:23:40:25] a breakdown of trust. And I do want to go to you. But 30 second responses. Kaja?

The Hon. Kaja Kallas: If the question was that how to make politicians see this, then the only way is the voters push. So if the voters really demand this, then it happens as well. But if those people who are left out of job due to the disruption are they with the strongest voice, then politicians tend to react on this and this is wrong.

Mr. Clemens Betzel: Data is the new oil. We need to embrace it as part of industrial revolution that we can shape, but we cannot stop it. We need to embrace it.

Mr. Steven Clemons: Carlo.

Mr. Carlo D'Asaro Biondo: (Inaudible) the way we do business plan and we think. Instead of looking at the morning first, look at the problem and sort out first. And I think this is the biggest lesson I had since I work at Google. What we are asked to do is try to understand what you sought out as an issue first. When this is clear, if it is an important issue, money will come after it. But don't try to get money first. And I think this is part of the problem we have. We tend to go to the consequences of things before to go to the cause. We should spend time on what issues you want to sort out.

Mr. Steven Clemons: Thank you for that. I'm going to go to Nisha live and I'll go virtually to someone. They took the question away. What do you think of the basic income idea? Will it help or hinder the transformation of the economy and labor market? So basic income and whatever brilliant question you have. Nisha tell us where you're from.

Ms. Nisha Agarwal: Sure. Hi, Nisha Agarwal, I work for the mayor of the city of New York. And I have a--I want to go back to the point that was made earlier about mobility and technology and the sort of inevitability in some ways of both. And we're seeing that certainly in Europe and the United States not only increases in technology and digitalization, but also huge movements of people, which will also continue. Some of it great and from a particular class, I think it worked for people like us. We will see lots more job mobility, et cetera. But also huge amounts of forced migration and mobility. And I'm just sort of wondering if folks could comment on that and maybe relate to earlier points.

Mr. Steven Clemons: Great, so mobility. One question from the Young Professionals Summit and basic income the other. Let me start with Clemens.

Mr. Clemens Betzel: Doubt I can help with mobility. We can use people with different language backgrounds with different skill backgrounds. We can be flexible with geography to a much larger extent. You can have decentralized manufacturing. You can order spare parts from one part and move it physically in a very quick way through 3D manufacturing, for instance. All those things are enablers and therefore we heard the colleague from Dima this morning here about their efforts to bring in new migrants into an economic structure.

With our flexibility and a good will from the regulators, we can do much more. And that is the ever recurring mantra, we want less and better regulation and people like Kaja fight for that in European Parliament and sometimes she has to fight very, very hard to keep it that way. But ultimately, the private sector will be able to pitch in.

Mr. Steven Clemons: Carlo?

Mr. Carlo D'Asaro Biondo: On mobility, I think there is two elements to it. There is, of course, enabling people to be able to survive through it. So I think it's about having different careers in our life and try to continue education over the life of people somehow. What concerns me today is that we are all confronted with having the need to [audio skip 10:27:19:27] and our education system and also our work systems are not enabled so much to change activities for people. [audio skip 10:27:25:23]

Mr. Steven Clemons: --and buffer people at some certain level from much of the change we're talking about and basic income plans. There are lots of different versions of them have been discussed. But that's the Parliamentarian response to what's required if you really embrace the turbo-charge convulsion, change side of disruption.

The Hon. Kaja Kallas: But that is actually a question of this basic income idea. I think it's very much related to the question of entrepreneurship. So we have this new technology, enables people to start their ideas, even very small ideas that could have a global market and no intermediaries in between, to reach many people with their ideas. So if we have this basic income, then they may not take this up because people are lazy and there is no initiative for entrepreneurship. So I'm not really supporting this idea, but [audio skip 10:28:40:21]

Mr. Steven Clemons: Are you a basic income guy?

Dr. James Manyika: Well, it's come up in different forms. I think what I'm for, though, is solving for the fact that, in many advanced economies, in the United States in particular, wages have been stagnant for the last 25 years, right? So I think something has--we have to solve for that in some form or fashion. I think we've mastered the problem in lots and lots of different ways. For a long time, we made up for the fact [audio skip 10:29:06:06] as opposed to one. Then hours worked then increased. So incomes haven't

gone up very much. So the question is, what do you do about that? And we know that it's mostly affected middle income families or with people working in the middle income--middle scale category the most. So what do you do about that?

Now I'm not going to advocate for any particular scheme that's been proposed, but I think solving for the fact that wages have been stagnant, I think, it's an important thing to do.

Mr. Steven Clemons: You know, I just want to say in closing, I was recently out at Google's complex in California and the various affiliate companies that Google's doing. Google is such an impressive company that if we were to have [audio skip 10:29:50:05] we would be talking about the implications of the end death where they're working very hard to try to end death. And it's just--it's very--I just want to sort of transport us for a moment that when we're here 10 years from now, and I very much hope we are, the kinds of questions we'll be asking about disruption are going to be radically different than those we've even conceived today.

And if you do go inject yourself, I mean, PLM software and a lot of what Siemens has done is made billions of dollars' investment in universities around the nation re-teaching engineers not only in continuing education programs, but within, you know, landing a module, a rover on Mars and landing a lot of things. The larger ships in the United States are now built with Siemens software. And so when you begin looking at that transformational change what I was pleased today with Kaja and James is you both have a sense of how some of these transformative and disruptions are coming at us, what are the big, hard choices that need to be made, and also what we think with the rest of the world. Because the other implications--ten years from now, Europe and The United States will be significantly smaller in their share of the global middle class because it's going to grow elsewhere. And that chasing the global middle class and those consumers is going to create a different dynamic, which I hope we get into.

So I want to thank very much Clemens Betzel, Mr. Carlo D'Asaro Biondo, Kaja Kallas and James Manyika. Great program. Thank you all very much.

By now, you're all very lucky to have Nik Gowing and one of the great minds of the universe, Robert Kaplan. Rob, Bob.

Mr. Robert Kaplan: Thank you, thank you, Steve.

Mr. Nik Gowing: Steve, before you go, I need to ask you, have you thought about the implications of not dying every day? Maybe this event didn't have to come to an end. Thank you all very much indeed. I've got to give you a right of reply, Robert, when Steve talks about you as thriving on darkness and cynicism. Is that true?

Mr. Robert Kaplan: I think the job of a journalist, that I learned in the Balkans in the 1980s before the wars there and in West Africa in the mid-1990s, before the collapse of certain states there, was that the most you could do for readers is to make them somewhat less surprised about what's going to happen five years down the road.

Because you can't predict tomorrow because that's decided by individuals working within the disfiguring whirlwind of passions. And you cannot predict 50 years out. But the middle term, future, if a journalist can make you somewhat less surprised, he's done his job. And if that takes pessimism and if you're analysis leads to pessimism in some instances, or to optimism when I did my projects on the Indian Ocean and Romania, that's fine, too.

Mr. Nik Gowing: Anyway, dark and cynical doesn't mean to say you're wrong. Let me just explain, so those of you who weren't here yesterday. What we're doing a wrap-up session at 12:45 tomorrow. And what we're doing is giving you a kind of commentary, an idea, a reality check on some of the things that have come out, try to find themes, and that's what Robert and I have been doing for the last 24 hours, to help guide you through this new disruption. And so there are a couple of themes, quickly, before you all go off to dinner.

First of all, Robert, what we heard from the Commissioner, Georgieva, earlier. The world may be richer but is much more fragile. It's not integrated on how to leap from crisis to crisis without a feeling of it all being fragile. This sense of fragility and--

Mr. Robert Kaplan: And of being overwhelmed. Because geopolitics is not the enemy of globalization. They go together. One reinforces the other. Because of globalization, the information revolution, each crisis in the world is interconnected organically with every other one like never before, so that, like, cold war area studies terms like southeast Asia, east Asia [audio skip 10:33:47:03] complexity. And when you mix that in with absolute population rises, it's not that geography's been defeated, it's been condensed [audio skip 10:34:04:13]

Mr. Nik Gowing: --to close our eyes when things are bad and pray things will pass over our heads. We only look in the rearview mirror, not ahead.

Mr. Robert Kaplan: Well, the problem with predicting the future is it hasn't happened yet. No. And the point is that everyone assumes that European Union withers away, what's going to replace it is worse. Well, maybe it will. You know, or European Union, as I said yesterday, is certainly worth preserving and we should work real hard on it. But we could have kinds of multiple identities and political organization in the future that can't even be imagined. Who, in futile times, could've imagined multi-ethnic empires like Ottoman, Turkey and Habsburg, Austria? Who, in those times, could imagine the modern nation

state? And who in these times--or who could've imagined the European Union in the late 19th century? And we can only use pieces of the past conceptually to construct the future. So it's a matter of trying to under--the more you try to read history and understand it, I think the easier it is to grasp what might come next.

Mr. Nik Gowing: And then what Karim from Morocco was saying about the lack of leadership and the capacity to adjust quickly faced with the enormity of the different variables. That's what he was laboring and pushing very hard during that session earlier.

Mr. Robert Kaplan: Yeah, well, that's where a kind of constructive pessimism can come in, of thinking tragically in order to avoid tragedy. You know, if only people had been more constructively pessimistic in planning the Iraq war, for instance. Or, for instance, everyone's talked about the good--technology to me is value neutral. It has a lot of good effects. People have talked about it at the last panel. But we also have ISIS, Boko Haram, Al Qaeda, which are all creatures of technology. ISIS [audio skip 10:36:17.21] that allows for power projection and the winning of new recruits. That's also technology. Boko Haram is, you know, is the communications revolution that has allowed for a globalized, radicalized, standard issue Islam, you know, merging with a weak state like Nigeria. Where, you know, a radical youth either has a choice of working for a utopian back to a lost golden age movement because Boko Haram is much more than just a terrorist group, or voting once every three years in an election which probably won't change things that much.

Mr. Nik Gowing: I'm thinking up on technology and what Anne-Marie was saying about the non-profit world. No longer just legal and economics, it's now computer code. So we're bringing in this whole argument full circle, the fact [audio skip 10:37:24:17] future of business. The fact is it's computer code, which is going to bring that enormous potential. Disruption but a positive disruption.

Mr. Robert Kaplan: Yeah, because what's clear is the increasing [audio skips and repeats 10:37:38:01] frequencies of interactions. Which means we're going to be a world of non-stop, constant crises for someone in the situation room in government, you know, in the [audio skip 10:38:37:01]

Dr. Ian Lesser: Thank you very much. So, you know, before we end the day, I just wanted to give you a little bit of a roadmap for those of you who have not been familiar with how we do this, for what we're going to do this evening. A couple of things. First of all, we have breakout dinners and you can gather for these breakout dinners in the courtyard of this hotel and there's a way to get there, which is that you take a right out of the--this has been written for me, as you will see. You can take a right out of the ballroom and use the stairs down from the Wilshire's Terrace or you can go through the lobby and around.

And if you've forgotten which dinner you're going to, on your badge, there is a number and this will tell you. If, for some reason, you don't have it, you can stop at the desk and they'll tell you exactly where you should go.

And also to remind you, unlike last night, where the night owls are actually going to be back here in this hotel and we'll bring you back here. So thank you all. Enjoy the evening. See you tomorrow.